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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/630,121	08/01/2000	Hao A. Chen	3620-023-01	8367

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EXAMINER	
WATKINS III, WILLIAM P	
ART UNIT	**PAPER NUMBER**
1772	

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/630,121	CHEN ET AL.	
	Examiner	Art Unit	
	William P. Watkins III	1772	

-- The MAILING DATE of this c mmunication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-21,31-33,37-40 and 42-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-21, 31-33, 37-40 and 42-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 7-21, 31-33, 37-40, 42-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson (U.S. 6,324,809 B1) in view of Nishibori (U.S. 5,869,138) and Graham (U.S. 4,849,768) further in view of Andres (U.S. 5,553,427).

Nelson teaches planks, which can be used to make up a floating floor: which can consist of a core layer, which may be PVC; and a decorative overlay, which may be a high pressure laminate (col. 2, line 50 through col. 3, line 45, col. 2, lines 1-5). The examiner notes that many options for the top and bottom layers of the core are taught, but that the core being exposed as the bottom surface, with a decorative laminate as the top surface, is a possible taught option (col. 2, lines 50-61). Nishibori '138 teaches printing a wood grain pattern on a

background colorant coating on a core with a clear protective top coat, the core is comprised of thermoplastic resin, which is used as a wood board substitute flooring (abstract, Figure 1). Graham teaches the use of a digital printing system to form a realistic wood grain pattern (abstract, col. 9, line 55 through col. 10 line 30, col. 1, lines 40-55). Andres teaches the use of hollow cavities in a PVC floor plank as well as the use of feet to raise the plank off the floor (Figure 7). The instant invention claims the use of printing on the core of a PVC plank in a floating floor with the use of hollow cavities and feet on the planks. It would have been obvious to one of ordinary skill in the art to print directly on the plank of Nelson et al. instead of using a printed overlay in order to save the expense of construction of the overlay and provide a realistic wood grain pattern because of the teachings of Nishibori '138 to form a realistic wood grain pattern on a thermoplastic core by direct printing (abstract, Figure 1) and further obvious to use a digital wood grain pattern in order to have a realistic wood grain appearance because of the teachings of Graham. It further would have been obvious to use cavities and feet in the planks of Nelson in view of Nishibori '138 and Graham in order to lower the weight and amount of material used in the core and to raise

the planks off of the subfloor for the purposes of insulation because of the teachings of Andres. Nelson appears both explicitly and implicitly to teach rectangular planks with no type of cupping. The examiner therefore takes the planks of Nelson as modified above to be equivalent to the heat-treated planks of the instant claims. The examiner takes the background colorant layer of Nishibori '138 as being part of the final printed pattern since it forms a visible part of the pattern. In the alternate it would have been obvious to delete the colored layer and just print a wood grain pattern if a less realistic appearance is acceptable as a trade off to produce a lower cost final product due to the deletion of a process step.

3. Claims 31, 7, 10, 11, 12, 33, 32, 47, 51 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishibori (U.S. 5,869,138) in view of Graham (U.S. 4,849,768).

Nishibori '138 teaches a plank made of a thermoplastic resin with a printed pattern on the core and a top coat on the printed pattern (abstract, Figure 6). The thermoplastic may be PVC (col. 8, lines 45-55). The examiner takes the colorant coating as being part of the printed pattern design since the color forms a visible part of the wood grain pattern and

therefore the printed pattern design is taken as being on the top surface of the core. Nishibori '138 appears both explicitly and implicitly to teach boards with no type of cupping. The examiner therefore takes the boards of Nishibori '138 to be equivalent to the heat treated planks of the instant claims. No backing layer is taught on the bottom of the core of Nishibori '138. Graham teaches the use of a digital printing system to form a realistic wood grain pattern (abstract, col. 9, line 55 through col. 10 line 30, col. 1, lines 40-55). The instant invention claims a thermoplastic plank with digital printing. It would have been obvious to one of ordinary skill in the art to have used a digital wood grain printed pattern on the plank of Nishibori in view of Graham in order to have a more realistic pattern because of the teachings of Graham.

4. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishibori (U.S. 5,869,138) in view of Nishibori (U.S. 4,610,900) further in view of Graham (U.S. 4,849,768).

Nishibori '138 teaches a printed pattern on a thermoplastic core as noted above. Graham teaches a digital printed wood grain pattern as noted above. Nishibori '900 teaches thermal

treatment of a thermoplastic core after molding in order to resist deformation of the core over time (abstract). The instant invention claims heat-treating of a thermoplastic core with a printed pattern. It would have been obvious to one of ordinary skill in the art to heat treat the board of Nishibori '138 in order to reduce deformation over time because of the motivation of the teachings of Nishibori '900 to heat treat thermoplastic boards to reduce deformation. It further would have been obvious to use a digital pattern as the wood grain of Nishibori '138 in view of Nishibori '900 in order to have a more realistic pattern because of the teachings of Graham.

5. Applicant's arguments filed 13 October 2004 have been fully considered but they are not persuasive.

Applicant continues to argue that Nelson requires a backing layer. For the reasons given previously the examiner maintains the position the no backing layer is an option as well a no top layer. Nelson teaches using a decorative layer while Nishibori '138 teaches printing directly on a core. Both references are directed to decorative effects of plastic floor cores. The overall purpose of Nelson would not be destroyed by using the decorative technique of Nishibori '138. Regarding

cupping, applicant continues to argue that the planks of the references will cup without heat treatment or backing layers, because it is known that this is a problem with some flooring systems. The references used in the rejections are silent on this point and the examiner does not infer that a problem with some flooring systems is also a problem with the specific cited references absent specific evidence about the references used in the rejections. Applicant argues that Nishibori '138 teaches role print or floexographic printing. The reference is not limited to these means and broadly recites printing. As noted by applicant Graham teaches a broad range of substrates and does not exclude plastic. Applicant's arguments regarding Andres are cumulative to those answered before. Regarding the rejection with Nishibori '138 as a base applicant argues that the teaching of a wood filler teaches away from use of digital printing as does the surface grinding of Nishibori '138. The examiner does not understand how the use of a wood filler teaches away from digital printing and as noted in the above rejection the sanding steps of Nishibori '138 can be deleted if one is willing to accept a less realistic pattern involving just printing. Regarding Nishibori '900 the use of reheating is taught to relieve stress (col. 4, lines 10-25) with surface treatment to

decorate or emboss the plank after heat treatment (col. 5, lines 25-30). Sanding thus does not prohibit printing. The instant claims do not exclude the use of a wood filler.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William P. Watkins III whose telephone number is 571-272-1503. The examiner works an increased flex time schedule, but can normally be reached Monday through Friday, 11:30 A.M. through 8:00 P.M. Eastern Time. The examiner returns all calls within one business day unless an extended absence is noted on his voice mail greeting.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR of Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

William P. Watkins III

WILLIAM P. WATKINS III
PRIMARY EXAMINER

WW/ww
December 27, 2004